This listing of claims will replace all prior versions, and listings, of claims in the application:

1  Claim 1 (original): A color reproduction system
2  comprising:
3       tristimulus value calculation means for calculating
4  tristimulus values under observation illumination light
5  corresponding to a spectral reflectance of an object,
6  said tristimulus value calculation means calculating the
7  tristimulus values using spectral reflectance data of a
8  color chip formed from a plurality of unit color chips,
9  color chip sensing data obtained by sensing the color
10  chip with an input device under the observation
11  illumination light, spectral sensitivity data of said
12  input device, and color matching function data;
13       means for calculating an output color image signal
14  based on the calculated tristimulus values; and
15       means for outputting a color image based on the
16  output color image signal.

1  Claim 2 (original): A system according to claim 1,
2  wherein said tristimulus value calculation means
3  multiplies the color chip sensing data by a matrix
4  obtained from a relationship between a product of the
5  spectral reflectance of the object and color matching
6  functions and a product of the spectral reflectance data

2

7    of the color chip and the spectral sensitivity of said

8    input device, thereby calculating the tristimulus values.


1    Claim 3 (original):  A system according to claim 1,

2    wherein said tristimulus value calculation means obtains

3    the tristimulus values as a linear sum of basis function

4    tristimulus values obtained by multiplying the color chip

5    sensing data by a matrix obtained from a relationship

6    between a product of a plurality of basis functions of

7    the spectral reflectance of the object and color matching

8    functions and a product of the spectral reflectance data

9    of the color chip and the spectral sensitivity of said

10   input device.


1    Claim 4 (currently amended):  A system according to claim

2    1, wherein ~~each of said first image sensing means and~~

3    ~~said second image sensing means~~ <u>said input device</u>

4    comprises a digital camera.


1    Claim 5 (original):  A system according to claim 1,

2    wherein the color chip has a plurality of unit color

3    chips having independent spectral reflectances and

4    arrayed in a matrix.


1    Claim 6 (original):  A system according to claim 1,

2    wherein said means for outputting the color image

3    comprises a monitor, and said means for outputting the

4    output color image calculates the output color image on

5    the basis of characteristics of said monitor.

1    Claim 7 (original):  A color reproduction system

2    comprising:

3         first image sensing means for sensing an object

4    under sensing illumination light;

5         means for calculating a spectral reflectance of

6    image data of the object sensed by said first image

7    sensing means on the basis of spectral sensitivity data

8    of said first image sensing means, spectrum data of

9    the sensing illumination light, statistic data of

10    a spectral reflectance of the object, and outputting

11    spectral reflectance image data corresponding to the

12    calculated spectral reflectance;

13         second image sensing means for sensing a color chip

14    under observation illumination light;

15         means for calculating tristimulus values of the

16    object under the observation illumination light on the

17    basis of the output spectral reflectance image data,

18    color chip image data of the color chip sensed by said

19    second image sensing means, spectral sensitivity data of

20    said second image sensing means, color chip spectral

21    reflectance data representing a spectral reflectance

22    distribution of the color chip, and color matching

23    function data;

24      means for calculating an output color image signal

25   on the basis of the calculated tristimulus values; and

26      means for outputting a color image on the basis of

27   the output color image signal.


1   Claim 8 (original):  A system according to claim 7,

2   wherein each of said first image sensing means and said

3   second image sensing means comprises a digital camera.


1   Claim 9 (original):  A system according to claim 7,

2   wherein the color chip has a plurality of unit color

3   chips having independent spectral reflectances and

4   arrayed in a matrix.


1   Claim 10 (original):  A system according to claim 7,

2   wherein said means for outputting the color image

3   comprises a monitor, and said means for outputting the

4   output color image calculates the output color image on

5   the basis of characteristics of said monitor.


1   Claim 11 (original):  A color reproduction system

2   comprising:

3      first image sensing means for sensing an object

4   under sensing illumination light;

5      means for outputting expansion coefficient data

6   which is represented as a linear sum of basis functions

7   of a spectral reflectance of the object on the basis of

8    spectral sensitivity data of said first image sensing

9    means, spectrum data of the sensing illumination light

10   and statistic data of a spectral reflectance of the

11   object;

12       second image sensing means for sensing a color chip

13   under observation illumination light;

14       means for calculating tristimulus values of the

15   object under the observation illumination light on the

16   basis of the output expansion coefficient data, color

17   chip image data of the color chip sensed by said second

18   image sensing means, spectral sensitivity data of said

19   second image sensing means, color chip spectral

20   reflectance data representing a spectral reflectance

21   distribution of the color chip, and color matching

22   function data;

23       means for calculating an output color image signal

24   on the basis of the calculated tristimulus values; and

25       means for outputting a color image on the basis of

26   the output color image signal.


1    Claim 12 (original):  A system according to claim 11,

2    wherein each of said first image sensing means and said

3    second image sensing means comprises a digital camera.


1    Claim 13 (original):  A system according to claim 11,

2    wherein the color chip has a plurality of unit color

3    chips having independent spectral reflectances and

4    arrayed in a matrix.


1    Claim 14 (original):  A system according to claim 11,

2    wherein said means for outputting the color image

3    comprises a monitor, and said means for outputting the

4    output color image calculates the output color image on

5    the basis of characteristics of said monitor.